b) Claims 11-18 stand rejected under 35 U.S.C. §103(a) over Sambrook et al;

c) Claims 12 and 19 stand rejected under 35 U.S.C. §103(a) over the combination of Sambrook and Takagi et al. (U.S. Patent No. 4,654,314).

The above rejections are moot since Claims 11-19 are cancelled by this Reply. In addition, Applicants respectfully submit that new Claims 21-37 are patentable over the cited art for at least the reasons discussed below.

Independent Claim 21 corresponds to cancelled independent Claim 11, but recites additional features which are not disclosed or taught in any of the references. In particular, Claim 21 adds the features of controlling an onset of polymerization and firing an article to undersinter the formed article.

In addition, Claim 21 recites the porosity and pore size of the end product (*e.g.*, the porous article), which enhances the tendency of bone cells or other biological material to attach itself to the walls of the pores. In contrast, the Office Action indicates that Sambrook discloses a filter having pore sizes (*e.g.* 10-16 microns) and that the final pore size of the foam may be dependent on the pore size of the filter. In other words, the pore size of the end product of Sambrook is not directly taught. While the pore size of the filter used during a bubbling stage of the gas is taught, the actual pore size of the end product is not mentioned. Moreover, Sambrook teaches that other factors in addition to the filter pore size help to determine the final pore size of the foam. For example, the degree of expansion and hence the pore size of the foam depends on the pressure selected during a drying step of the foam composition. In

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addition, increasing the speed of stirring when introducing gas bubbles affects the pore size of the article. See page 9, lines 8-10 and page 10, bottom 4 lines. Therefore, a disclosure of the pore size of the filter by itself is not an enabling disclosure of the pore size of the end product.

In addition, Takagi is relied upon for teaching that artificial parts comprising growth of bone cells in ceramic products is known. However, Takagi does not disclose the pore size of the end product, as recited in independent Claim 21.

Further, there is no disclosure in either Sambrook or Takagi about the merits of undersintering, that is, sintering at a lower temperature. This feature of undersintering, as recited in the claims, and the attachment of bone cells is disclosed quite clearly in the examples and photographs of Applicant's specification. However, the cited references provide no such teaching. Therefore, the recited feature of undersintering the formed article, as recited in independent Claim 21, is not disclosed or taught by the cited art. Accordingly, Claim 21 is patentable over the Sambrook and Takagi references for at least this feature. Claims 22-37 depend from independent Claim 21, and are thus also believed to be patentable over the cited art.

CONCLUSION

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable consideration and allowance of the claims are earnestly solicited.

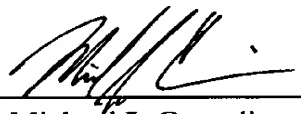
Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below to further expedite prosecution of the application.

Please charge or credit our Account No. 03-0075 as necessary to affect entry and/or ensure consideration of this admission

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

July 3, 2001

By 

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Attachments:
Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 11-19 have been cancelled.

Claim 20 has been amended as follows:

20. (Amended) The [A] method according to Claim 21 [11], including adding a drug to the pores of the article.

Claims 21-37 have been added as follows:

21. A method of making a porous article composed of bonded particles and having a controlled level of porosity, pore size and interconnectivity, the method comprising the steps of:

t) forming a dispersion comprising a liquid carrier, particles to be bonded and a polymerizable monomeric material;

u) adding a surfactant and then introducing small bubbles of oxygen containing gas into the dispersion with agitation to form a foam which is allowed or caused to coalesce;

v) controlling an onset of polymerization, then

w) polymerizing the foamed structure;

x) drying the structure to remove the liquid carrier and provide a solid article having pores derived from the bubbles and

y) firing the article to a temperature to remove the organic material and to undersinter the formed article and thereby form the porous article which has a porosity of 20% to 95% and comprises pore walls and struts defining pores of pore sizes having a range of 15 to 150 micrometers and in which cells may easily be attached.

22. The method according to Claim 21, wherein the period until onset of polymerization is between an instantaneous polymerization and about 20 minutes.

23. The method according to Claim 21, including the step of controlling the onset of polymerization by adjusting addition levels of an initiator and catalyst for polymerization of the monomeric material.

24. The method according to Claim 21, wherein the particles in the dispersion are less than about 5 micrometers.

25. The method according to Claim 21, wherein the particles are hydroxyapatite, oxides and non-oxides.

26. The method according to Claim 21, wherein the content of the solids in the dispersion is about 10% to about 90% by weight.

27. The method according to Claim 26, wherein the content of the solids is about 40% to about 80% by weight.

28. The method according to Claim 21, wherein the liquid carrier is water, organic liquid or a mixture thereof.

29. The method according to Claim 21, including the step of adding a dispersing agent to the dispersion.

30. The method according to Claim 21, wherein the solid article is substantially dried and then fired at about 1250°C for two hours.

31. The method according to Claim 21, wherein the solid article is dried and then fired at about 1350°C for about two hours.

32. A method according to Claim 21, wherein the formed body has a true porosity of from about 20% to about 95%.

33. A method according to Claim 21, wherein the formed body has pores in the pore size range of about 5 micrometers to about 20 micrometers.

34. A method according to Claim 21, wherein the formed body has pores in the pore size range of about 50 micrometers to about 150 micrometers.

35. A method according to Claim 21, wherein the formed body has pores having a pore size greater than about 150 micrometers.

36. A method according to Claim 21, including a subsequent step of growing bone cells in the porous product.

37. A method according to Claim 21, including a subsequent step of infilling the pores of the porous product with a drug.